Cite: Carles Sudrià, A hidden fight behind neutrality. Spain's struggle on exchange rates and gold during the Great War, *European Review of Economic History*, Volume 25, Issue 3, August 2021, Pages 549–570, https://doi.org/10.1093/ereh/heaa024

A hidden fight behind neutrality. Spain's struggle on exchange rates and gold during the Great War

CARLES SUDRIÀ
Centre d'Estudis 'Antoni de Capmany', Universitat de Barcelona, Facultat d'Economia i Empresa, Av. Diagonal, 690; 08034 Barcelona, Spain, sudria@ub.edu

Abstract

The aim of this article is to analyze the effects on Spain as a neutral country of the monetary measures adopted by the largest allied nations during the First World War. We will focus on the intervention of exchange rates and on the measures aimed at limiting gold outflows from belligerent countries. The distortions derived from these policies gave rise, in some cases, to additional profits for Spanish exporters and intermediaries, while in others prevented the effective transformation of some benefits from war into valuable assets and pushed them to be dragged down by the economic disturbances of the postwar period.

Keywords: Exchange rates, gold reserves, neutrality

J.E.L.: N440, N240, F420

A Hidden Fight Behind Neutrality: Spain's Struggle with Exchange Rates and Gold During the Great War

1. Introduction

The First World War presented an extraordinary challenge for the international economy and the international monetary mechanisms that had been developed throughout the previous century, namely the gold standard system. Most countries at war faced growing external deficits and serious financing problems, while neutrals ran large external surpluses. Imbalanced trade increased the demand for neutral currencies and produced intense downward pressure on belligerent exchange rates. To cope with the situation, France and Great Britain took steps to maintain stable nominal exchange rates between their respective currencies and with the US dollar. They also intervened in neutral currencies exchange markets. Stabilizing exchange rates regardless of price differentials took away their relative purchasing power, thus leaving room for speculative gains (Eichengreen 1992, ch. 3; Hardach 1977, ch. 6; Findlay and O'Rourke 2007, pp. 429-443; Broadberry and Harrison 2005).

Another controversial decision imposed by the main allied countries involved avoiding gold outflows, despite the growing demand from abroad. In some cases, these embargoes were applied in a devious manner, trying to hide government intervention.

The obvious objectives of these policies were defensive in nature: to avoid increasing the cost of imports and to retain gold, the supreme symbol of wealth. However, these same measures also had internal side effects, ranging from dislocation of relative prices to changes in income distribution. There is a large body of literature on the financial difficulties of belligerent countries and the policies they adopted (Decamps 1922; Jèze and Truchy 1927; Petit 1929; Kirkaldy 1921; Morgan 1952; Bogart 1921; Fisk 1924; Wrigley 2000; Blancheton 2001, pp. 87-136; Horn 2002; Burk 1985; Daniel *et al.* 2014). Conversely, neutral countries have drawn far less attention from both contemporary and recent researchers. Some countries, like Sweden and the Netherlands, have been studied in some detail (Westergaard 1930; Schön 2010; Hedberg 2016; van der Flier 1930; de Jong 2005), while studies on other countries have lacked a comprehensive approach. In the case of Spain, the subject has been almost completely overlooked. An extensive monograph on the Spanish economy during the war (García Delgado, Roldán and Muñoz, 1973), does not explain exchange rates of the peseta, nor does it relate them to the Allies' monetary policies. Only two articles (Young, 1920; Sudrià, 1990) touch on the effects of belligerent monetary policies on the Spanish economy.

Although the economies of neutral countries were characterized primarily by neutrality and were affected by the same decisions made by the belligerents, each presented different geographical and political conditions. Great Britain exercised close supervision over the Netherlands and the Scandinavian countries, while Switzerland and Spain were conditioned to a lesser extent. Spain was the only neutral with free access to the sea and a land border with a belligerent country.

This work deals with the commercial and financial relations between Spain, as a neutral, and the main allied countries (France, Great Britain and the United States) during the First World War. It focuses on the effects of the exchange rate and gold policies implemented by the Allies on the Spanish economy. It seems that Spain, if not so closely monitored by the allies, received harsher treatment when conflicts arose, especially from the US government. For this reason, among others, Spaniards were forced to hold in the form of monetary assets in foreign currency around 20 percent of the accumulated current account surpluses. In this way, the "benefits of neutrality" were surely undermined to some extent by the post-war depreciations.

The paper is divided into five parts. After this introduction, we present a brief review of the foreign trade evolution of the main Allied countries (France, Great Britain, and the United States) during the war, including the agreements between them. This is followed by a more specific analysis of Spanish trade with belligerent countries, including developments in peseta exchange rates and attempts to control them. The fourth section examines the methods used to settle Spain's large current account surplus and the associated "battle for gold". Finally, the paper concludes with a summary of the main points discussed throughout the work.

2. The Allies' Foreign Trade During the War: France, Great Britain and the United States

2.1. The European War: The Anglo-French Agreement of 1915

The war affected the foreign trade of most countries, including both belligerents and neutrals, albeit in different directions. The major European Allies, France and Great Britain greatly increased their demand for imports, while their exports were hampered by the conflict itself. The consequent decline in their trade balance, however, was much more intense in France than in Great Britain. At the end of 1916, France's export-to-import ratio had fallen from the pre-war level of 0.73 to 0.29, while Great Britain's ratio had only reduced from 0.68 to 0.46 (*Annuaire Statistique de la France ; Statistical Abstract for the United Kingdom*). Other components of the current account, such as services and transfers from abroad exceeded Britain's trade deficit before the war. During the conflict, these flows remained fairly stable, which helped the country cope with the huge increase in goods net imports (Morgan, 1952, pp. 315-317; Broadberry and Howlett, 2005, pp. 220-222). Although France also received such ‘invisible’ earnings from abroad, the amounts were smaller, and they decreased during the war. Tourism stopped and capital returns from investments in some countries (e.g. Egypt and Russia) greatly diminished (Jèze 1921, p. 182; Rist and Schwop 1939, pp. 530-533).

In the first few months after the war broke out, the authorities might have thought that the economic problems posed by the conflict were manageable. France’s trade deficit, for instance, remained at the pre-war level of 100 million francs for almost six months, while British imports did not begin to increase until the final weeks of 1914. By mid-1915, however, any optimistic expectations had crumbled. France’s monthly trade deficit jumped to 600 million francs and had reached 800 million by the end of the year; British imports for June and July 1915 grew by a third with respect to previous years (*Trade and Navigation: Accounts Relating to Trade and Navigation of the United Kingdom*; *Bulletin de la Statistique Générale de la France*).

Not surprisingly, both countries’ authorities were alarmed by the turn of events, but what worried them more was not in fact the growing disequilibrium of the balance of trade, but rather the fall in exchange rates. The franc had been weakening against the British pound since November 1914, and it lost parity (£3.965 for 100FF) in January 1915. Three months later, however, the franc began to reel when it fell to £3.923 in April, £3.852 in June and £3.715 in July, a decline of 5.3% in four months. The British pound itself also lost parity vis-à-vis the US dollar in January 1915 and fell by 5% the following July (Figure 1).

It is important to note that neither politicians nor the public had experience on floating exchange rates. Under the gold standard system each currency had a specific, permanent value in terms of gold with which it was convertible. Fixed gold content of the currencies led to fixed exchange rates. Thus, if convertibility was effective in two countries, there was no room for significant exchange rate movements between their currencies. The outbreak of the First World War had an immediate effect on monetary mechanisms. The first victim was convertibility. Governments authorized issuing banks to do not exchange gold for banknotes. From this moment on, the value of banknotes in circulation depended on market movements.

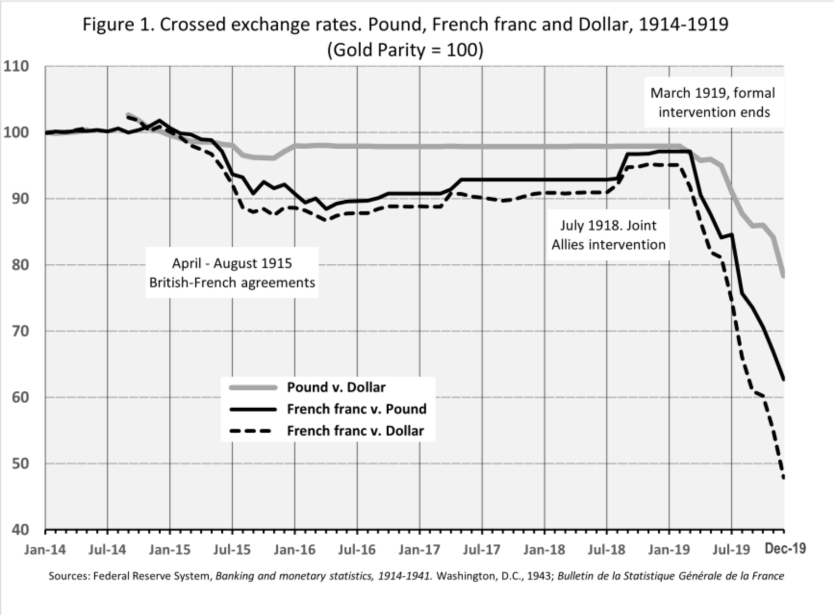


Figure 1. Crossed exchange rates. Pound, French franc and Dollar, 1914-1919 (Gold Parity = 100)

Sources: Federal Reserve System, *Banking and monetary statistics, 1914-1941.* Washington, D.C., 1943; *Bulletin de la Statistique Générale de la France*

The French authorities perceived the drop in the value of the franc as a very serious problem. It was clear that the cost of imports needed by France would be directly related to the exchange rate at which the market would value the franc against the currencies of its supplying countries. Therefore, keeping the exchange rate as close to parity as possible became a key objective of French economic policy at this stage (Blancheton 2001, pp. 111-136; Décamps 1922; Petit 1929).

The British authorities thought that their domestic market would be strong enough to provide resources for both Britain and its allies, if needed. This optimism soon proved misplaced. An early warning came with the dramatic failure of the first issuance of war bonds on November 1914, which was concealed from the public (Anson 2017). The British government were also concerned by the Bank of England’s meagre gold reserves. Traditionally, a very small portion of the Bank’s reserves were in the form of gold (see Table 4 later). This was a sign of strength and confidence and was also a profitable option. However, faced with a general war, it seemed advisable to increase the Bank’s gold stocks to avoid any inconvenience.

Thus, in early 1915, France and Britain faced different types of emergencies: France sought a way to fill its trade deficit without driving the value of the franc down even further, while Britain, though also concerned about the value of its currency, wanted to strengthen its gold reserves as much as possible. Furthermore, an agreement between Great Britain and France would be viewed favourably as a sign of the long-awaited unity of action between the Allied powers, given the impasse in the armed conflict.

Negotiations were not easy, but an agreement was finally reached in April 1915. The chief points were:

a) The British Treasury opened a credit account for the French government for a maximum of £42 million to pay for imports from Great Britain, the United States and Canada.
b) The French government agreed to sell gold to the Bank of England for £20 million, to be used to pay for imports.
c) Of the total of £62 million available, £50 million would be spent in the United States and Canada and the remaining £12 million in Great Britain.

The Franco-British agreement was extended several times under the same or similar conditions. This was France's main source of funds from abroad until April 1917, when the United States joined the Allies (Petit 1929, pp. 194-198, and 762).

This deal was crucial to stop in curbing the franc's fall against the pound sterling, but the threat of loss of value of both the pound and the franc against the dollar remained. It was necessary to find a way of raising much more funding in the form of dollars. After some hesitation, a decision was made to launch a joint Anglo-French loan that would be placed on the North American market. The US government authorized the operation, but not before expressing its uneasiness over the matter (Burk 1985 pp. 72-73). Although the placement among the public could not be completed, the new funds made it possible to stabilize exchange rates. After recovering slightly, the pound stood at around $4.76 in December 1915 and would hold steady until March 1919, when the intervention ended. The management of the market was entrusted to J. P. Morgan, who was already working as a purchasing agent and lender for the British government.

Keynes, then at the Treasury, was a staunch advocate of a fixed exchange rate policy with France and the United States. In a long memorandum written in January 1917, he dismissed the idea of abandoning fixed rates due to the disarray that would arise and the devastating loss of confidence among international depositors. According to him, such a decision was "gravely injurious to our credit; and it affords encouragement to the enemy" (Keynes 1978, part 1, pp. 215-222).

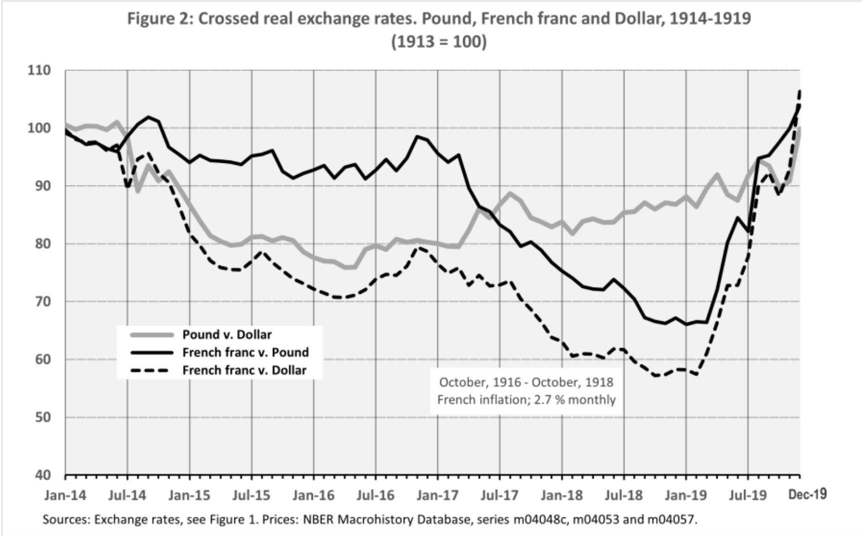
At the end of 1916, after two and a half years of war, it was apparent that the financial capacity of the Allies was nearing its limit and that the war expenses would soon be very difficult or impossible to finance. It should be noted that Great Britain financed not only its own war efforts but also those of other Allied countries, including France and Russia. The entry of the United States into the war arrived precisely at a time when the system established in 1915 had reached exhaustion, without any alternative in sight (Burk 1985, pp. 94-95; Petit 1929, pp. 431-437; Ferguson 2000, pp. 422-423).

2.2. The United States Joins the Allies and the War Becomes Global

The United States declared war on Germany and its allies on 7 April 1917. In the weeks that followed, the United States signed agreements with several Allied governments. The United States would advance money to these countries, leaving the repayment terms to be fixed after the war.

The United States granted to the Allies until the armistice roughly $7 billion, the double of the amount cross-borrowed between them prior to April 1917. At the end of the war, the intergovernmental debt among the Allied countries arising from the conflict amounted to just over $16 billion in net terms (Moulton and Pasvolsky 1932, pp. 425-426; Fisk 1924, pp. 121 and 345).

Exchange rate intervention continued on the same terms, with very slight fluctuations in the target price until March 1919, when Britain's withdrawal from the exchange rate support mechanism was made public, thereby forcing France to abandon it too. The effect was immediate. The franc-pound exchange rate took a precipitous fall from £3.85 per 100 francs, which had been the last objective of the intervention, to £2.49 per 100 francs at the end of 1919, an adjustment of one third in nine months. In the case of the dollar-pound exchange rate, the decline over the same period was somewhat less precipitous; from $4.76 to $3.81 per pound, a drop of 20% (Figure 1). The magnitude of these drops reflects the intensity of the previously applied intervention. One way to measure this intensity is to estimate the real exchange rates by applying relative prices to nominal rates. While the nominal exchange rate measures the relation between the values of two currencies, the real exchange rate measures the relative price of goods; in other words, the purchasing power of a domestic currency in a foreign country. As shown in Figure 2, the real exchange rates in some phases fell by almost half with respect to the pre-war equilibrium. The most remarkable cases were the pairings of the franc versus the pound and, especially, the franc against the dollar. Also worth noting is the fact that the maladjustment persisted for more than two years. Given that the nominal rates remained pegged, this was clearly the consequence of a much higher rate of inflation in France than in the other Allied countries (Eichengreen 1992, pp. 72-73; Blancheton 2001, pp. 113-126)



The exchange rate policy introduced by Great Britain and France, and which the United States later joined, not only affected trade between the three Allied countries, but also had an effect on every country that traded with them, whether belligerent or neutral.

3. The Allies and the Peseta Exchange Rate

3.1. Spain, 1914. Instability, Stagnation, and Neutrality

In Spain, the escalating tension that led to the outbreak of the First World War was viewed as an extraneous and remote affair. At the time, the country faced a series of problems that monopolized the attention and concern of politicians and the public alike. The political system of the Bourbon Restoration, which was established in 1874, was breaking down, thus leading to enormous instability. The situation also influenced the country's economic performance. In the four decades between the reinstatement of the Bourbon monarchy and the outbreak of the First World War, Spain's growth had been slower than that of all major European states; 0.67% per year compared to 0.8-1.0% for the others. Spain missed out on the intensive growth phase that had boosted the continent's other peripheral economies (Prados 2017, pp. 39-46). Political paralysis and economic stagnation, plus the weakness of the Spanish armed forces let no other alternative than neutrality. With general assent, it was formally proclaimed on 7 August 1914 (Romero Salvadó 1999; García Sanz and Fuentes Codera 2015).

The effect of the conflict on the Spanish economy was complex. The sudden increase in net external demand for goods and services and in the price of imports caused a shock that was as intense as it was uneven. Some sectors reaped extraordinary profits, while others stagnated or shrank because of a lack of input or specific demand. The Spanish government and the Bank of Spain pursued a passive policy that allowed foreign inflation and the country's large external surplus to produce a rapid increase in internal prices. As wages grew more slowly, strikes proliferated and social and political clashes spread (García Delgado, Roldán and Muñoz 1973; Carreras and Tafunell 2004, pp. 223-234).

The trade and services surplus vis-à-vis the belligerent countries caused significant tensions in the exchange markets. The franc and the pound lost value against the peseta (see Figure 3). Soon, the Spanish currency began to be priced above its nominal value. The fall in the price of the Allied currencies with respect to the peseta, was almost identical until mid-1915. In the following months, however, the depreciation of the franc became more dramatic.

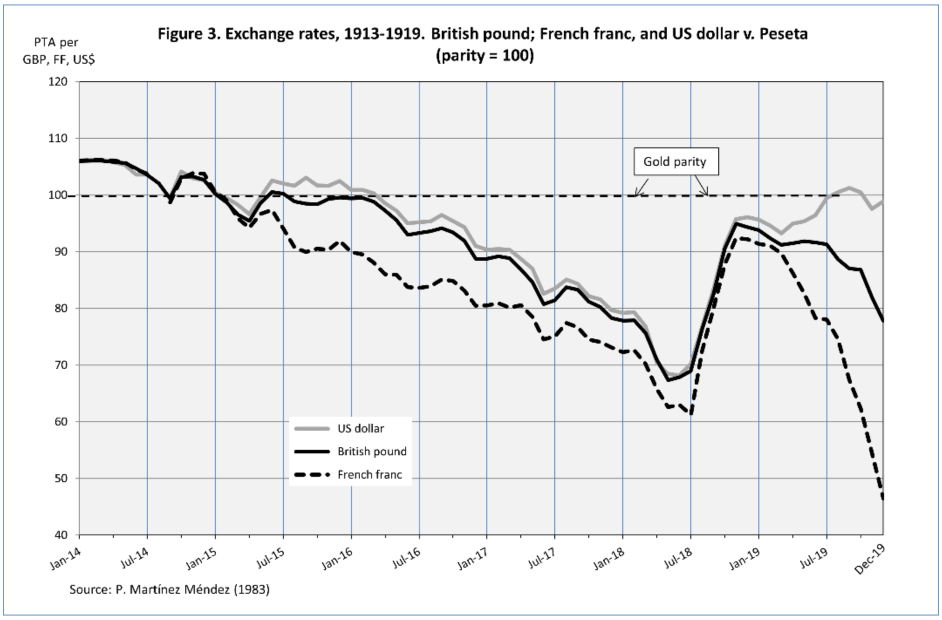


Figure 3. Exchange rates, 1913-1919. British pound; French franc, and US dollar v. Peseta (parity = 100)

Source: P. Martínez Méndez (1983)

The British and French authorities immediately realized the consequences of these events. Above all, it meant an increase in import prices that would heighten the price rise already caused by the rapid growth in the belligerents' demand and the urgency of their needs. While the evolution of exchange rates for both countries' currencies was similar, the effects were much worse in France than in Great Britain. Spain provided approximately 5.5% of French imports in 1915, whereas the equivalent figure for Great Britain was just 2.5% (*Annuaire Statistique de la France* ; Kirkcaldy, 1921, pp. 368-397).

3.2. France's Struggle with the Exchange Rate

The first serious drop of the franc-peseta exchange rate took place in the first three months of 1915, when the franc lost around 10% of its relative value. The Bank of France considered this fall excessive and decided to intervene Throughout April and May of 1915, the Bank acquired paper francs with gold for roughly 35 million francs. It was not a negligible sum, but the effects on the price of the franc were short-lived. After several weeks of apparent recovery, the depreciation of the French currency resumed its course, but this time the fall did not affect the pound. Between July and

September of 1915, the pound held steady against the peseta, but the franc lost 8% of its value.

Obviously, the decline of the franc with respect to the peseta was a consequence of the disequilibrium in France's balance of trade. However, some French politicians were not ready to accept that a currency supported by large gold reserves could lose value against another much weaker. In any case, the French authorities faced a problem that was not easy to solve. As stated later by Lucien Petit, "*Le gouvernement français ne pouvait continuer à pourvoir à ses dépenses en Espagne comme il l'avait fait jusque-là,… par les achats du change sur le marché qui s'épuisait, ou par des envois d'or : il eût vidé en quelques mois les coffres de la Banque de France*" (Petit 1929, p. 541) To prevent the franc from continuing to fall against the peseta, there were only two possibilities beyond spending gold reserves: paying for imports in Spanish securities held by French investors or obtaining credit from a Spanish bank or the Spanish government.

The sale of Spanish securities held in France had started spontaneously, shortly after the outbreak of the war. The buyers sold these securities to pay for the Spanish goods. The flow of securities, however, was not large enough to cope with purchases. The French franc was under constant pressure and its exchange rate with the Spanish peseta was continuously falling.

After the Franco-British agreement was signed and implemented, the exchange rates between the peseta and the pound and dollar were strongly influenced by the relative value of the peseta with respect to the franc, since France was the largest contributor to Allied trade with Spain; the French trade deficit with Spain in the 1914-1919 period was close to 3,000 mPTA, for 1,000 mPTA of British trade, and a surplus of 1,400 mPTA for the United States. Somehow, the French franc dragged the pound sterling and US dollar down against the Spanish peseta.

Despite the disappointing results of the first attempt to intervene and the opposition of some top officials, the French government authorized a second intervention in December 1916. The Bank of France was forced to contribute 20 million francs in gold. Both the French ambassador in Madrid and the Minister of Finance were sceptical about the operation, later borne out by the results, which the ambassador called "minimal" (Ministère de l'Europe et des Affaires Étrangers -France-. Archives Diplomatiques (thereafter, ADF), Guerre 1914-1918, Espagne, vol. 1444, pp. 660-664).

The third and final intervention by the French government on the exchange rate of the peseta was carried out jointly with Great Britain and the United States in April 1918. We will refer to it later.

3.3 Lord Cunliffe Against the Treasury on Spanish Exchange

The exchange rate policy pursued by the British government and the Bank of England was conditioned by London's role as the world's leading financial hub and custodian of gold reserves for individuals and companies. As we will see later, the Bank of England and British private bankers were selling gold to the Bank of Spain until July 1916. This helps explain why the peseta-pound exchange rate remained fairly stable during this period. This was also the opinion of Gustave Bauer, the Rothschild representative in Spain, according to a report sent by the French ambassador in Madrid to the French prime minister on 30 March 1916 (ADF, Guerre 1914-1918. Espagne, Vol. 1444, pp. 629-633).

After some hesitation, the British Treasury and the Bank of England began to give the highest priority to safeguarding gold reserves. By hidden means, they achieved total discontinuity of gold shipments to Spain. The gold embargo in turn produced a sharp fall in the exchange rate of the peseta. The pound was at par (25.22 pesetas) in February 1916 and fell to 23.45 pesetas in June (7% below) and to 22.38 pesetas in December (11% below par).

This situation bothered the Treasury officials in charge of acquisitions in Spain, which caused a dispute between the Treasury and the London Exchange Committee. The London Exchange Committee was set up on 18 November 1915 by Chancellor of the Exchequer Reginald McKenna. The Committee was given responsibility for all gold, securities and loan proceeds owned by the government and the assignment of regulating sterling exchange rates, mainly against the dollar. In June 1917, the Committee noted that the fall in the Spanish exchange rate was the result of purchases by the Treasury to meet the government's demand. Treasury officials responded that purchases in Spain remained within the narrowest possible limits and added:

> *My Lords* [the British government] *are strongly of the opinion that the time has now come when the Spanish (and Swiss) Exchanges should be the subject of regulation by the London Exchange Committee on the same principles as those which the Committee has applied with considerable success in the case of Holland* (Osborne 1926, vol. II, p. 63).

The Committee's answer was as forceful as the Treasury's statement: it said that it was only able to exert control over an exchange if it had enough resources at its command; furthermore, the Committee believed that it was not advisable to use gold to back this exchange. Subsequently, the Committee stated that the efficient control of the Spanish exchange would require the expenditure of at least £200,000 in gold, an excessive amount in its opinion. This disagreement continued until the very end of intervention (Osborne 1926, vol. II, pp. 62-64). The relationship between Chancellor McKenna and Governor Cunliffe was very difficult from the start, as the often-badtempered governor was very resentful of the Treasury's interventionism in monetary matters (Sayers 1976, vol. I, pp. 99-109).

3.4. The United States Imposes its Terms

After the war broke out, President Wilson built his policy around the idea of neutrality as an opportunity for peace, and consequently championed strict respect for the rights of neutral countries, including their right to trade freely with belligerents. Obviously, Spain was fully sympathetic with this position. Accordingly, Wilson's decision to declare war on the Central Powers totally upended the political, commercial, and financial relationships between Spain and the United States.

The new position of the United States as a belligerent soon cornered the old rhetoric of neutrality, which President Wilson wanted to preserve. Freedom of trade for neutral countries, for instance, stood at odds with the evidence that some products bought from Allied countries could be sold to the enemy through a neutral country, either directly or indirectly. On the other hand, Great Britain and France urged the United States to prioritize the need for rapid victory over every other consideration. Step by step, the US government took decisions that led to the use of commerce restrictions as a tool to force neutrals compliance (Bailey 1942). Because of its geographical position and its narrow dependence on American supplies, Spain was the most likely victim of the new policy (Montero Jiménez 2008 and 2011).

From the summer of 1917, Spanish ships began to encounter difficulties in obtaining the mandatory cargo permits for various products. The situation worsened with the formation of the War Trade Board (October 1917), which was responsible for coordinating all of these measures and linking them to the establishment of reciprocity agreements with the affected countries. The new agreements also included a clause to oblige any neutral country to accept the conditions proposed by other countries in the alliance. The cascade of restrictive measures led to the practical hijacking of many Spanish ships, which were held up in the U.S. for lack of authorization to load or refuel.

Under such pressure, on 30 January 1918, the Spanish authorities accepted an agreement in principle that seemed to satisfy the Allies' demands. The United States and Spain agreed to grant each other export licences for a series of products and in the specific quantities requested by each country. Despite its initial agreement, however, the Department of State refused to sign, and more talks were needed. At last, the modified agreement was signed on 6 March 1918. (Papers relating to the foreign relations of the United States, 1918. Supplement 1, The World War Vol. II, Washington, D.C.: U.S. Government Printing Office 1933, pp. 1671-1674). The demands of Britain and France were also satisfied. The Spanish ships anchored in US ports were allowed to refuel and depart for their destinations, while access to blockaded products was gradually relaxed (Montero Jiménez 2011, pp. 173-176).

3.5. The 1918 Episode and Some Quantitative Conjectures

The exploits of the Spanish exchange rate during the First World War involved one last telling episode. In March 1918, a new shock jolted the Allied economic authorities. The fall in the exchange rates of the franc, the pound and the dollar against the peseta began to pick up speed. From the previous November until February 1918, the average monthly loss had varied between 1 and 2%, but in March it reached 3.6% and in April it exceeded 6%. In the words of the French Minister of Finance, Louis-Lucien Klotz, the plunge was hugely significant: "*une importance qui dépasse la pure question financière et exige impérieusement une intervention vigoureuse et immédiate*" (Letter to the French ambassador in London, 15 April 1918. ADF, Guerre 14-18, Dossier Générale , 1443)

While Britain and the United States were reluctant to intervene in the market, France tried to curb the fall. The first purchases of francs took place in the second half of May 1918. France knew that it alone could not sustain the currency, much less reverse the downward trend. Shortly afterwards, on 8 May, the British Treasury agreed to the French plan, but its American counterparts remained unconvinced. The US representatives only gave their initial agreement on 30 May, but on the condition that the US contribution would be financed through a loan from Spanish banks (ADF, Guerre 14-18, Negotiations économiques, 1448; and Guerre 14-18, Dossier Générale , 1443).

At the beginning of June, the exchange rates stabilized, but at extraordinarily low levels: 61.25 pesetas per 100 francs (the gold parity was 100); 16.62 pesetas per pound (par was 25.22 pesetas per pound); and 3.50 pesetas per dollar (par was 5.1826 pesetas per dollar). Later in the month, the first shipment of British gold arrived and the exchange rates began to rise at an increasing pace. On 25 October, the British government agreed to a £2 million loan in pesetas from Rio Tinto Co. secured by Treasury bills of £2.5 million (Wormell 2000, p. 285). News of the Allies' decisive victory in the Second Battle of the Marne helped sustain the recovery (see Figure 3). American intervention came later. It became feasible only after the first instalment of the loan signed on 8 August 1918 with the Bank of Barcelona and Urquijo & Co. By November 1918, the Allied currencies had regained their 1915 levels: 92.4 pesetas per franc; 23.9 pesetas per pound; 5.03 pesetas per dollar.

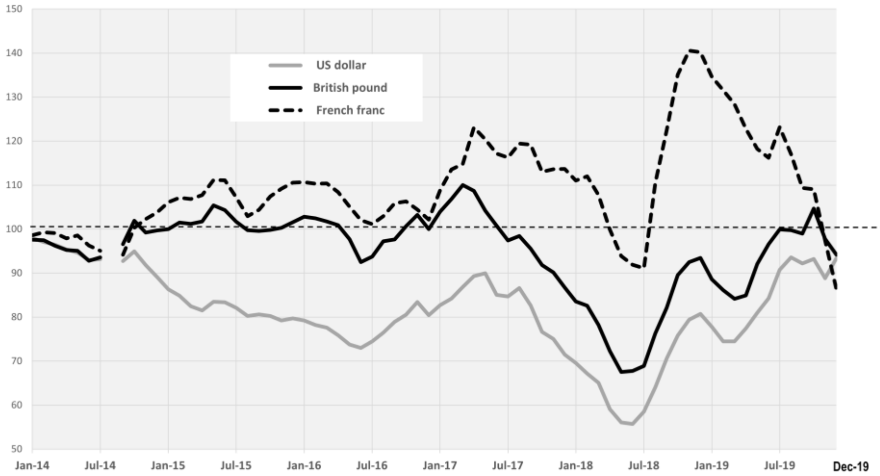
This episode could be related to the speculative operation attributed to Keynes (see Zagorsky 2019). In fact, a market break was not required to obtain healthy benefits. It would be enough to be aware of the intervention launched by the main Allied countries on the peseta, which we have just described.

The apparent normalization, however, was short-lived. In March 1919, the intervention that had bound together the three main Allied currencies was called off

(Petit 1929, pp. 166-169). This sudden change resulted in an immediate disparity in the currencies' prices and gave rise to a period of major instability (see Figures 1 and 3).

As stated earlier, the effects of exchange rate manipulation can be appraised through real exchange rates. The results are plotted in Figure 4. A point in a line represents the current exchange rate as a percentage of the exchange rate that would make the purchasing power of both currencies equal. As shown, the dollar was systematically undervalued against the peseta and by a considerable amount, whereas the pound was abnormally cheap only in the last two years of the period. This means that Spain was able to buy both American and British products at a lower cost in terms of pesetas. The same thing occurred when gold rather than goods were bought abroad. The Appendix includes an example of how these exchanges took place and their alleged profitability.

Figure 4. Real exchange rates 1914-1919.. French franc; British pound and US dollar against the peseta (1913=100)



Sources: Exchange rates: P. Martínez Méndez (1983); Prices: NBER Macrohistory Database, series m04048c, m04053 and m04057; Maluquer de Motes (2013, serie B2.1, pp. 109-110)

Table 1 shows the estimated savings made by Spain over the whole period because of the exchange controls established by the Allies. Exchange controls reduced the cost of imports from both countries by roughly 500 million pesetas, or approximately 15% of their total value. The effect of the Allies' exchange rate policy on neutral countries was not negligible.

Table 1. Reduction of Spain's imports cost due to exchange rates control								
	Imports from the United States			Imports from Great Britain				Total savings over total imports from US and GB
	Actual value	PPP exchange	Savings	Actual value	PPP exchange	Savings	Total Savings	
	Million PTA	Million PTA	Million PTA	Million PTA	Million PTA	Million PTA	Million PTA	%
1914	150	170	20	224	232	8	27	7.3
1915	239	254	15	217	236	19	34	7.5
1916	324	358	34	275	310	35	69	11.6
1917	407	508	101	120	153	33	134	25.4
1918	289	382	93	83	112	29	122	32.9
1919	517	564	47	325	389	63	110	13.3
1914-1919	1,925	2,235	310	1,244	1,431	187	497	15.7
Source: see text								

4. Profits and Losses: Spain in the Battle for Gold

The major surpluses and deficits run by most countries during the war had to be matched by changes in indebtedness between the countries or by transfers of gold or securities. During the war, neutrals usually had a surplus, while belligerents had a deficit, with the sole important exception of the United States, which was first neutral and then belligerent, but always ran a surplus. Transfers of gold however, seldom encountered serious opposition among the deficit countries. In Spain, the favourable commercial conditions produced by the war and reinforced by exchange rate misalignments, together with the income flows from Spanish migrants in France and the Spanish merchant fleet, added up to a substantial current account surplus. An estimate of the main components of the Spanish current account balance during these years is shown in Table 2.

Since the publication of this estimate, two new calculations of the Spanish trade balance have appeared, those of A. Tena (2005) and L. Prados (2017). For the period 1914-1919, Tena's total trade balance is approximately 10% lower than that of Sudria (1990). Prados calculation refers to the goods and services accounts. His estimate of the net balance exceeds Sudria's by about 15 percent. The reason for this difference could be found in the greater benefits that Prados attributes to the Spanish merchant fleet. If Prados estimate were adopted, an even larger share of the total surplus would have remained in the form of short-term monetary assets at the end of the period. See Section 4.5.

Table 2. Spain's current account estimate, 1914-1919. Million PTA							
	1914	1915	1916	1917	1918	1919	1914-1919
France	78	398	556	820	270	765	2,889
Great Britain	133	168	119	2	136	354	915
United States	-43	-196	-263	-380	-258	-265	- 1,407
Argentina	27	8	-2	45	28	83	190
Others	-190	-36	-104	-72	-109	521	10
Total trade balance	5	343	305	417	68	1,458	2,597
Total balance of services	100	192	303	303	347	125	1,371
Balance of factors's income and transfers*	160	160	160	160	160	160	960
Total current account	265	696	769	880	575	1,743	4,928

*This item includes payments abroad for dividends and interest obtained by foreign capital invested in Spain, and remittances sent to Spain by Spanish workers abroad. Payments derived from investments in public debt and railways have been estimated directly based on the information available of the volume of these securities held abroad in 1914. Migrants remittances has been calculated scaling down the estimates available for the 1930s.

Source: Sudrià (1990)

As shown, the overall surplus arising from the war came to nearly 5 billion pesetas, with slightly more than half of the total coming from goods trade and almost 28% from the activity of the merchant fleet. From the perspective of the Spanish economy, this was a considerable amount. It was equivalent to three times a yearly gross fixed capital formation or a half of all Spanish public debt in 1913. An estimation of how this amount was settled appears in Table 3.

Table 3. International economic position of Spain. Change 1914-1919	
	Rounded estimates Million PTA
Increase in gold holdings of the Bank of Spain	1,900
Spanish Public debt acquired abroad	500
Spanish railways securities acquired abroad	900
Loans to Allied countries (soldes on dec. 31, 1919)	800
- France (1916-18) ... 130	
- France (1918-19) ... 450	
- United States 150	
- Great Britain 70	
Total	4,100
by difference: net increase of international assets held by Spain residents	900

Sources: Sudrià (1990); Young (1920, pp. 84-90)

Despite its many limitations, this estimate helps highlight a few of the characteristics of the process; first, the dominant nature of gold acquisitions, which accounted for almost half the total surplus; second, the absence of securities of foreign companies and other entities among the assets acquired from abroad by the Spanish public; and, lastly, the fact that a portion of the overall external balance could not be cashed in through any of the previously mentioned routes. It likely remained in the form of foreign monetary assets in the hands of residents in Spain. We will discuss this topic later.

4.1. The Bank of Spain's Golden Moment

The outbreak of the First World War was viewed by the Bank of Spain as an opportunity to expand the Bank's gold reserves, which were believed to be too weak. In 1914, Spain's gold reserves represented only 28-29% of the banknotes in circulation, while in other European countries this ratio was in the region of 50-60%, and even higher in France and Great Britain *(Federal Reserve Bulletin*, Nov. 1921, p. 1295). The Bank's rules did not allow it to buy gold at a price above parity. As the peseta was not convertible and always floated below par, the Bank was unable in normal circumstances to increase its gold reserves (Serrano 2004; Martín Aceña, Martínez Ruiz and Nogués-Marco 2012).

Several weeks after the war broke out, however, the peseta traded close to par and the Bank prepared itself for a massive gold purchase. As the peseta's relative overvaluation against the Allied countries' currencies grew, the operation to buy gold abroad and sell it to Bank of Spain became more profitable. The Bank slightly lowered the price it paid to gold suppliers. The measure was not aimed at reducing the supply of gold to the central bank, as occurred in the Scandinavian neutrals (Kirkaldy 1921, pp. 336-338) but rather at increasing the Bank's profits. According to the Bank, profits from buying gold below the official rate reached 30 million pesetas in 1917 and 2.8 million in 1918. That meant for 1917 to double the regular profits. (Cf. *Memoria leída en la Junta General de Accionistas del Banco de España*, 1917 and 1918).

By 1919, when the operation ended, the Bank's gold reserves had more than quadrupled to 1.9 billion pesetas. The above-mentioned ratio between reserves and circulation climbed to 67%. Behind this policy lay the possibility of restoring both the peseta's convertibility (abandoned in the 1880s) and the gold standard system in Spain. This decision, however, was never made, and the gold remained buried in the coffers of the Bank of Spain. It was spent almost a decade later by the Republican government in its failed effort to defend the legal regime against the military uprising of 1936-39 (Viñas 1984, pp. 168-204).

Besides the accumulation of gold, no other economic goals appeared to concern the Spanish authorities. The increase in domestic prices did not worry them until workers' protests erupted and strikes threatened the whole economy. Even then, the Bank accepted no responsibility for inflation. According to its directors, the rise in prices was related to the scarcity of goods, not to gold purchases or the increase in banknotes in circulation (Martín Aceña 1984, p. 40-41).

Obtaining gold, however, was no easy task. As the war progressed, gold became a strategic weapon that everyone wanted to retain, even countries with larger reserves. Obviously, erecting de jure or de facto barriers to prevent gold outflows went against the basic rules of the gold standard system and would ultimately render it impossible.

4.2. France: Securities Instead of Gold

In the case of Spain, France was the first country forced to deal with the problem of settling a growing trade deficit. As this deficit was pushing down the value of the franc in the exchange market, the Bank of France decided to act by buying French banknotes in Spain in exchange for gold. As mentioned, the amount invested in the whole operation reached 35 million francs and the results were far below expectations (Petit 1929, p. 715).

Since then, a very restrictive policy on gold was adopted. Its main defender was the Governor of the Bank of France, Georges Pallain (Blancheton 2015). Apart from the gold outflows agreed with Britain, only a second operation in the Spanish market was allowed. It took place in December 1916 for 20 million French francs. If gold could not be used, there only two alternatives remained: obtain a credit from abroad or deliver securities or other property to creditors.

As mentioned above, the sale of Spanish securities held in France had begun spontaneously shortly after the war broke out. The French government launched a campaign to acquire Spanish securities held in France. In May 1916 reached an agreement with Banco Urquijo, the oldest and most reputable of Spain's private banks. Banco Urquijo granted to the French government a loan backed by securities for the payment of its purchases in Spain. The maximum amount was 200 million pesetas, with 120 million pesetas guaranteed by Spanish public debt and the remaining 80 million pesetas backed by Spanish railway securities, both stocks and bonds (Delaunay 1984; Petit 1929, pp. 541-565; ADF, Guerre 1914-1918, Espagne vol. 1444, pp. 649-650).

From the outset, the agreement ran into serious difficulties. The Bank of Spain refused to accept Spanish foreign debt bonds as collateral and Banco Urquijo ruled out these securities. The matter was not settled until October 1917. In the end, the loan came to 161.2 million pesetas spread over three years, from 1916 to 1918.

A second loan to France was granted by Spain as part of an agreement signed on 6 March 1918 that resulted from the extreme pressure exerted by the United States on neutrals after its entry into the war. Two bank consortia were formed, one in each country, to finance the French purchases in Spain. French Treasury bonds were used as collateral. The maximum amount of the loan was first set at 350 million pesetas, but later increased to 455 million pesetas. Repayments took place in several instalments until 1923 (Petit 1929, pp. 576-579).

But was repatriating the country's securities abroad a good option for Spain? The repurchase of public debt could be considered a favourable move; railway stocks and bonds, by contrast, were not really a desirable financial asset. The railway companies had been undergoing serious economic difficulties for decades and dividends were low and uncertain and would remain so until the nationalization, in 1941 (Ortúñez 2016). Conversely, highly profitable foreign-owned companies operating in Spain, such as Rio Tinto Co., Société Minière et Métallurgique de Peñarroya, Barcelona Traction, Light and Power Company, Compagnie Royale Asturienne des Mines and Orconera Iron Ore Co. Ltd., were not available to Spanish investors. Old regulations against the investment in foreign financial assets were ratified again under stricter terms by the Spanish Ministry of Finance in 1916, amid a protest against capital fligh.

4.3 The Bank of England Conceals the Embargo

After the outbreak of war, the chief aim of the British authorities and economic institutions was to maintain "the façade of the gold standard even though [its] economic and political bases … had been fundamentally transformed" (Eichengreen 1992, p. 67). For almost two years, Great Britain continued in her traditional role as the main hub of international finance. This involved, among other things, providing debtors and creditors with ways of settling their debts.

Surplus countries like Spain profited from this apparent 'business as usual' approach. The Bank of England sold gold bars to the Bank of Spain for £4 million from October 1914 to July 1916. In the same period, private transfers (mostly in sovereigns) amounted to approximately £11.1 million (Osborne 1926, vol. III, pp. 232-233). Gold from Great Britain was the main method of paying for the Spanish trade surplus (in the region of 400 million pesetas).

As stated early, about mid 1916 the British Treasury and the Bank of England became convinced that some kind of gold embargo was unavoidable. Treasury officials, however, believed that a formal suspension would be very damaging to the City's prestige and future. Consequently, a devious way was adopted. The Treasury forced insurance companies to refuse to cover the transport of gold. In doing so, the British authorities blocked shipments of gold not only from Great Britain, but also from Latin America and elsewhere. Sir John Bradbury, permanent secretary to the Treasury, stated precisely what was going on: "The general policy of the Bank and the government was not to forbid the export of gold, but to make it as difficult as possible to obtain" (Osborne 1926, vol. II, p. 209).

In the case of Spain, the first warning came in October 1915, when the Bank of England announced that it would be unable to supply any more gold bars to the Bank of Spain for the time being. In their response, the Spanish authorities argued that gold was needed to adequately cover the rapid increase in banknotes in circulation and provided assurances that it would not be sold to foreigners. Gold shipments continued for a while. Insurance problems first surfaced in March and deliveries of gold from Great Britain to Spain came to a permanent halt in June 1916 (Osborne, 1926, vol. III, pp. 233-234).

4.4. The United Stated Fights Back for Gold

In the wake of these developments, the London market was closed as a gold supplier for the remainder of the war. Nevertheless, Spain's current account balance was still in surplus, and the Bank of Spain was ready to buy gold elsewhere. The only available supplier at that time was the United States, the largest country that retained free convertibility. First US gold shipments arrived in Spain in June 1916, the same month that last British ones. The flow of gold from America grew rapidly, from $16.3 million in the second half of 1916 to $53.9 million in the first half of 1917, then to $51 million over the rest of the year. Throughout 1917, Spain ranked as the second largest gold importer from the United States after Japan and represented 30% of the total (Department of Commerce, Bureau of Foreign and Domestic Commerce, *Monthly summary of the foreign commerce of the United States*).

The situation was unusual. A major gold flow was being directed to a country with which the United States maintained a trade surplus. As with the exchange rate mentioned earlier, this paradox was the result of the financial agreement between the Allied countries that turned them into a single agent in the market. The global trade balance with this group of countries was favourable to Spain, and it was this surplus that came to be settled with US gold outflows to Spain. ("Spain's Foreign Commerce and Finance, 1914-1919", *Federal Reserve Bulletin*, Nov. 1919, pp. 1036-1042; Young, 1920).

The Federal Reserve Board understood that the outflow of gold was a part of global adjustment between belligerent and neutral countries. What they considered offensive was the Bank of Spain's decision to buy dollars below the official rate. The Board thought that this forced the value of the dollar further down and harmed American importers.

As early as January 1917, the Federal Reserve had offered the Bank of Spain a partnership with the Federal Bank of New York to strengthen direct transactions and prevent exchange rate instability. The Bank of Spain flatly rejected the offer (Letter from Governor Harding to Senator Robert Owen, AFED, Mimeograph Letters and Statements of the Board, January 1916 to December 1917, Volume 6; 19 September, 1917, Exhibit B). On 10 July, the Board again discussed the issue under pressure from some large importers with powerful political ties. A gold embargo was refused in accordance with the Secretary of the Treasury and a new warning to the Spanish government about the Bank of Spain's policy was requested. Finally, a general declaration was approved. Principles were ratified but the door was left open to new pressures:

“The Board thinks it important to the banking position of the country that the United States maintain a free gold market so far as relates to all neutral exchange. Under no circumstances should the Government place an embargo upon gold shipments since this would be detrimental to the credit of the United States. The United States should maintain and recognize the right of the community in shipping gold abroad, but it should use such means as may be available to prevent shipment from being made in those cases where there is a discrimination against this nation… It would be wise to place in the hands of Federal Reserve banks the power to supervise the movements of gold…” (US National Archives and Records Administration --hereafter NARA--, Minutes of the Board of Governors of the Federal Reserve System, 10 July 1917).

There was an open struggle between liberals and interventionists, but the battle was soon over. On 7 September 1917, President Woodrow Wilson issued a proclamation and an executive order that instituted a prior permit regime for gold exports in all its forms. Despite the fact that the Secretary of the Treasury was appointed the highest authority in the granting of permits with wide discretionary powers and shared this responsibility with the Federal Reserve, the interventionists won. Permits for gold exports were granted only if the transaction was of immediate interest of the United States: “...we will no longer be required to furnish the gold for the settlement of transactions with which we have no concern… European nations will be obliged to settle their balances among themselves…”(Letter from Governor Harding to Senator Robert Owen, AFED, Mimeograph Letters and Statements of the Board, January 1916 to December 1917, Volume 6; 19 September 1917).

The results were apparent. Gold exports from the United States decreased from around 40 million a month before the embargo to less than 4 million during the 20 months of the intervention. Not a single permit was granted to export gold to Spain.

4.5. The Final Lesson: Managing the Aftermath

Despite all the obstacles created by the Allied governments and the circumstances, the achievement of Spain’s gold policy seems quite remarkable. As shown in Table 4, Spain ranked third worldwide in terms of the amount of gold added to its reserves in absolute terms and second in relative terms, after Japan. In 1919, Spain had risen to fourth place in the world in terms of the absolute amount of gold reserves.

Table 4. Monetary gold distribution, 1913-1919						
	Dec., 31, 1913		Dec., 31, 1919		net increase 1913-1919	increase o/1913
	$ mill	%	$ mill	%	$ mill	%
United States	1,290	26.6	2,518	37.0	1	95.1
France	679	14.0	695	10.2	16	2.3
Germany	279	5.7	260	3.8	- 19	6.9
Italy	267	5.5	200	2.9	- 66	24.9
United Kingdom	165	3.4	578	8.5	413	250.6
Japan	65	1.3	350	5.1	285	438.5
Allied total	2,795	56.5	4,601	67.6	1,856	67.6
Spain	92	1.9	471	6.9	379	409.7
Netherlands	61	1.3	257	3.8	196	320.8
Sweden	27	0.6	75	1.1	48	175.2
Norway	12	0.2	40	0.6	28	234.5
Denmark	20	0.4	61	0.9	41	208.6
Switzerland	34	0.7	100	1.5	66	195.6
European neutrals	246	5.1	1,004	14.8	758	307.6
Russia	785	16.2				
Austria-Hungary	251	5.2	45	0.7	-206	- 82.1
Other	3,574	17.1	1,155	17.0	- 462	
Total	**4,860**	**100,0**	**6.805**	**100.0**	**1,945**	**40.0**

Source: Federal Reserve System (1943). *Banking and monetary statistics 1913-1941.* Washington, D. C., pp. 544-545 and 550-551.

The success of the Bank of Spain does not mean that it polices were beneficial for the country. At national level, the systematic and massive acquisition of gold was hailed by the country's press as a necessary step in the long-awaited adoption of the gold standard. However, the relationship between gold inflows and overall price increases was not recognized. The gold standard was never adopted, and the reserves accumulated were not used to boost the economy through imports, nor did they provide specific returns.

At international level, it seems excessive to attribute the blockade of international gold movements, first by Great Britain and later by the United States, to the Bank of Spain's policy. In both cases, it seems evident that embargoes represented exercises in power inspired by the same gold fetishism that could be attributed to Spain. Both countries recognized internally that these embargoes violated international rules and sought ways to camouflage or misrepresent arguments to justify them. If anything, Spain was a scapegoat for the biggest players, rather than the main character. Gold has intrinsic value, and in extreme situations it turned out to be the only guarantee for effective purchases.

Gold shipments ceased in mid-1918; by then no more Spanish securities could be found in foreign countries. As the current external balance remained in surplus, especially in 1919, a residual sum of between 900 million and 1 billion pesetas could not be converted into gold or Spanish securities. At the end of the period, these resources were still in the hands of Spanish residents in the form of foreign currency assets, including banknotes and current account balances. Most holders of these assets held out legitimate hope of cashing them in in the immediate future. During the war, both the authorities and the general public alike genuinely believed that currency inconvertibility was only a temporary expedient and that currencies would again be interchangeable with gold at the same rate as before, once peace was achieved.

Inevitably, this mass of resources gave rise to all kinds of speculative phenomena, which would persist well into the 1920s. There were also some constructive proposals. In the case of Spain, the most elaborate and ingenious was devised by Francesc Cambó, leader of the Regionalist League of Catalonia and Minister of Finance and Development at the time. Cambó's idea was to establish a series of corporations in Spain (one corporation per foreign currency) that would then issue bonds in their respective currency for purchase by Spanish holders. With the resources obtained, these corporations would acquire real estate and other well-insured assets in the countries of origin. Cambó's initiative faced strong opposition, from both high-level authorities and the press, which characterized the operation as covert capital flight. The scheme was finally abandoned (Cambó, 1920; Sudrià, 1990, p. 391-392).

The composition of the residual finances left in the hands of Spaniards at the end of the war is unknown. It does seem clear, however, that the depreciation suffered by most currencies meant a net loss for their holders with respect to their prospects, which represented a serious setback for the Spanish economy after the major benefits obtained during the war.

5. Conclusions

The First World War presented an extraordinary challenge for the international economy. The belligerent countries tried to alter, in their favour, some of the formal and informal rules that ensured the entire system ran smoothly. Two of these rules, a free currency market and free movement of gold between countries, were overlooked by some governments. In any case, the effects of interventionist policies went far beyond the belligerents and Allies. Neutral countries were also affected by them. The purpose of this paper was to analyse the effects on these deviant policies in Europe's largest neutral country, Spain.

Regarding exchange rates, we have seen how attempts by the French government to intervene in the Spanish currency market had ephemeral effects. A similar proposal from the British Treasury was rejected by the London Exchange Committee, the body in charge of British monetary reserves. Only one operation agreed by the three Allied powers in mid-1918 succeeded in bringing the effective exchange rate closer to official parities. It can be stated, then, that for much of the war period the Spanish exchange rate was set up in almost free market conditions.

In these circumstances, Britain and France's decision to keep the exchange rates between their currencies and with the dollar stable in nominal terms, regardless of price differentials, caused Allied currency values to deviate from their relative purchasing power. The franc was largely overvalued, in both nominal and real terms. Spain profited from these misalignments, since it was able to buy American and English goods at a lower cost, in addition to gold, when this was permitted. Exchange rate intervention did not produce quieter markets. Conversely, discrepancies among the Allies and the sudden abandonment of the scheme produced major movements in the relative values of currencies that gave way to a new world of instability.

Unbalanced foreign trade is an inevitable feature of economies at war. Solving deficits and surpluses implies changes in the international economic positions of the countries involved and, often, changes in gold reserves. Spain accumulated a large surplus during the war, and the Bank of Spain saw this as a unique opportunity to increase its gold reserves. However, deficit countries tried to block gold withdrawals, either openly or surreptitiously. Spain was able to largely achieve its goal through different means, but the battle for gold did not come without cost.

On the whole, the exchange rate controls and gold embargoes imposed by the Allies had the opposite effect on the Spanish economy. With respect to imports, Spain undoubtedly benefited, since it was able to import British and American goods at lower costs. By contrast, the blockage of gold movements in the final months of the conflict gave rise to a situation of monetary chaos that resulted in notable losses for Spanish holders of foreign currencies. The effects of these foreign policies added to those of Spain's own decisions, such as allowing a massive expansion of the money supply and giving preference to gold as an "asset" in which to place the surplus in the balance of payments.

As yet, there is no conclusive consensus on the effects of the First World War on the Spanish economy. Most economic historians agree on the idea of missed opportunity, as the overall earnings did not lead to companies' investment in new technology, nor were they employed by the state to reinforce neglected infrastructure or to sustain policies designed to narrow the increasing social gap.

The Spanish case is not representative of other neutral countries in Europe. Its geographical position and trade possibilities made a crucial difference, and very different domestic economic policies also played a role. However, it is also true that neutrality was a distinctive, inescapable factor behind the economic performance of these countries during the First World War.

Acknowledgements

The author wishes to express his sincere gratitude to the *Mission Historique de la Banque de France* and to Professor Michel Margairaz for their kind hospitality. The suggestions of three anonymous reviewers have greatly contributed to improving the paper.

Conflict of interest statement

None declared

Funding

Financial suport of the *Centre d'Estudis 'Antoni de Capmany', Universitat de Barcelona* (funded by the *Generalitat de Catalunya,* research group 2017 SGR 1466), and the Spanish Government (MICINN) and the European Regional Development Fund (ERDF) through the project PGC2018 093896-B-100, is gratefully acknowledged.

References

ANSON, M. *et alia* (2017). Your country needs funds: The extraordinary story of Britain's early efforts to finance the First World War. *Bank Underground Blog (Bank of England),* 8 August 2017. (https://bankunderground.co.uk/2017/08/08/your-country-needs-funds-the-extraordinary-story-of-britains-early-efforts-to-finance-the-first-world-war/)

BAILEY, T. A. (1942). *The Policy of the United States toward the Neutrals, 1917-1918*. Baltimore, The Johns Hopkins Press.

BLANCHETON, B. (2001). *Le Pape et l'Empereur : la Banque de France, la direction du Trésor et la politique monétaire 1914-1928,* Paris, Albin Michel.

BLANCHETON, B. (2015). Décider dans l'urgence : la gestion monétaire et financière de l'année 1914. In DESCAMPS, F. y QUENNOUËLLE-CORRE, L., eds., *La mobilisation financière pendant la Grande Guerre. Le front financier, un troisième front*. Paris, IGPDE, pp. 105-120.

BOGART, E. L. (1919). *Direct and indirect costs of the Great World War*, New York, Oxford University Press.

BROADBERRY, S.N. and HARRISON, M., eds (2005). *The Economics of World War I*. Cambridge, Cambridge University Press.

BROADBERRY, S.N. and HOWLETT, P. (2005). United Kingdom during World War I: business as usual?. In Broadberry, S.N. and Harrison, M. eds., *The Economics of World War I*, pp. 206-234.

BURK, K. (1985). *Britain, America and the Sinews of War, 1914-1918*. Boston, G. Allen & Unwin

CAMBÓ, F. (1920). *El problema de les monedes estrangeres* . Barcelona, Henrich y Cia.

CARRERAS, A., and TAFUNELL, X. (2004). *Historia económica de la España contemporánea.* Barcelona, Crítica.

DANIEL, U.; GATRELL, P.; JANZ, O.; JONES, U.; KEENE J.; KRAMER, A., and NASSON, B., eds. (2014). *1914-1918-online. International Encyclopedia of the First World War,* Berlin, Freie Universität Berlin.

DECAMPS, J.(1922*), Les changes étrangers*. Paris, F. Alcan.

DELAUNAY, J.-M. (1984). Les crédits Urquijo et la France en guerre. *Mélanges de la Casa de Velázquez*, vol. XX, pp. 339-353.

EICHENGREEN. B. (1992). *Golden Fetters. The Gold Standard and the Great Depression, 1919-1939*. Oxford, Oxford University Press.

FERGUSON, N. (2000). How (Not) to Pay for the War Traditional Finance and "Total" War. In CHICKERING, R. and FÖRSTER, S., eds., *Great War, Total War: Combat and Mobilization on the Western Front*. Cambridge, Cambridge University Press, pp. 409-434.

FINLAY, R. and O'ROURKE, K.H. (2007). *Power and Plenty. Trade, War, and the World Economy in the Second Millennium.* Princeton, Princeton University Press.

FISK, H. E. (1924). *Inter-Ally Debts. An Analysis of War and Post-War Public Finance, 1914-1923*. New York-Paris, Bankers Trust Company.

GARCÍA DELGADO, J.L., ROLDÁN, S., MUÑOZ, J. (1973).*La formación de la sociedad capitalista en España (1914-1920)*, 2 vols. Madrid, CECA.

GARCÍA SANZ, C. and FUENTES CODERA, M. (2015). Toward new approaches to neutrality in the First World War: rethinking the Spanish case-study**".** In RUIZ SÁNCHEZ, J.L.; CORDERO OLIVERO, I. and C. GARCÍA SANZ, eds., *Shaping Neutrality throughout the First World War*. Seville, Ediciones Universidad de Sevilla.

HALL, G. J. (2004).Exchange Rates and Casualties During the First World War. *Journal of Monetary Economics*, 51, pp. 1711-1742

HARDACH, G. (1977). *The First World War, 1914-1918.* Berkeley, University of California Press.

HEDBERG, P. (2016). The Impact of World War I on Sweden's Foreign Trade and Growth. *Journal of European Economic History*, **3**, pp. 83-103.

HORN, M. (2002). *Britain, France, and the Financing of the First World War,* Montreal, McGill-Queen's University Press.

JÈZE, G. (1921). The Economic and Financial Position of France in 1920. *The Quarterly Journal of Economics,* 35, 2, pp. 175-214

JÈZE, G., TRUCHY, H. (1927), *The war finance of France*. New Haven, Yale University Press.

JONG, H. DE (2005). Between the devil and the deep blue sea: the Dutch economy during World War I. In BROADBERRY, S.N. and HARRISON, M., eds. *The Economics of World War I*. Cambridge, Cambridge University Press, pp. 137-168.

KEYNES, J. M. (1978). *The Collected Writings of John Maynard Keynes. Part I:The Treasury in the War Years.* Edited by Elizabeth Johnson and Donald Moggridge. London, Royal Economic Society

KIRKALDY, A. W., ed. (1921). *British finance during and after the war 1914-1921.* London. Isaac Pitman & Sons.

MALUQUER DE MOTES, J. (2013). *La inflación en España. Un índice de precios de consumo, 1830-2012*. Estudios de Historia Económica, n. 64. Madrid, Banco de España.

MARTÍN ACEÑA, P. (1984). *La política monetaria en España, 1919-1935*. Madrid, Instituto de Estudios Fiscales.

MARTÍN ACEÑA, P.; MARTÍNEZ RUIZ, E., and NOGUÉS-MARCO, P. (2013). The Bank of Spain: A National Financial Institution, *Journal of European Economic Hisstory*, 42, 1, pp. 11-46.

MARTÍNEZ MÉNDEZ, P. (1983). Nuevos datos sobre la evolución de la peseta entre 1900 y 1936. IN ANES, G., L.A. ROJO and TEDDE, P., eds. *Historia económica y pensamiento social: estudios en homenaje a Diego Mateo del Peral*. Madrid, Alianza, pp. 561-610.

MONTERO JIMÉNEZ, J. A. (2008). Diplomacia económica y balanza de pagos. Los pactos hispano-estadounidenses de 1918. *Revista de Historia Económica/Journal of Iberian and Latin American Economic History,* **XXVI**,pp. 243-276.

MONTERO JIMÉNEZ, J. A. (2011). *El despertar de la gran potencia. Las relaciones entre España y los Estados Unidos (1898-1930)*. Madrid, Biblioteca nueva.

MORGAN, E. V. (1952). *Studies in British Financial Policy, 1914-1925.* London, Macmillan & Co.

MOULTON, H. G. and PASVOLSKY, L. (1932). *War debts and world prosperity*. New York, The Century Company.

ORTÚÑEZ, P. P. (2016), Railway Financing before nationalization. Spain 1855-1941, in Cassis, J., De Luca, G., Florio, M. *Infrastructure finance in Europe: insights into the history of water, transport, and telecommunications*. Oxford, Oxford University Press, pp.218-239.

OSBORNE, J.A.C. (1926). *The Bank of England, 1914 – 1921*. 4 vols. Archive document. Archive of the Bank of England. Reference BOE M7/156-159 [attributed to Osborne by W. A. Allen]

PETIT, L. (1929). *Histoire des finances extérieures de la France pendant la guerre (1914-1919).* Paris, Payot.

PRADOS DE LA ESCOSURA, L. (2017). *Spanish Economic Growth, 1850-2015*. Cham, Switzerland, Palgrave.

RIST, L. and SCHWOB, P. (1939). Balance des paiements. *Revue d'Économie Politique*, 53, 1, pp-528-550.

ROMERO SALVADÓ, F. J. (1999). *Spain, 1914-1918: Between war and revolution*. London, Routledge

SAYERS, R. S. (1976). The Bank of England (1891 -1944). Cambridge, Cambridge University Press.

SCHÖN L. (2010), *Sweden's Road to Modernity*, Stockholm, SNS Förlag

SERRANO, J. M. (2004). El oro en la Restauración. Madrid, Real Academia de Ciencias Morales y Políticas.

SUDRIÀ, C. (1990). Los beneficios de España durante la Gran Guerra. Una aproximación a la balanza de pagos española, 1914-1920. *Revista de Historia Económica,* VIII, pp. 363-396.

TENA, A. (2005). Sector exterior, in CARRERAS, A. and TAFUNELL, X., eds., *Estadísticas Históricas de España. Siglos XIX y XX*. 2nd edition , Madrid, Fundación BBVA, pp. 573-644

VAN DER FLIER, M.J. (1930). *War finances in the Netherlands up to 1918.* Clarendon, Oxford.

VIÑAS, A. (1984), *Guerra, dinero y dictadura.* Barcelona, Crítica

WESTERGAARD, H., *ed.* (1930). *Sweden*, *Norway*, *Denmark and Iceland in the World War,* New Haven, Yale University Press.

WORMELL, J. (2000). *The management of the national debt of the United Kingdom, 1900-1932*. London, Routledge.

WRIGLEY, C. J., ed. (2000). *The First World War and the International Economy.* Cheltenham, UK, Edward Elgar.

YOUNG, A. N. (1920). *Spanish Finance and Trade*. Washington, Department of Commerce.

ZAGORSKY, J. (2019), John Maynard Keynes, Man or Myth? The Incident of the Spanish Pesetas (March 1). Available at SSRN: https://ssrn.com/abstract=3363332

Appendix.

Spain takes profit of misalignments of exchange rates. An example, december 1917

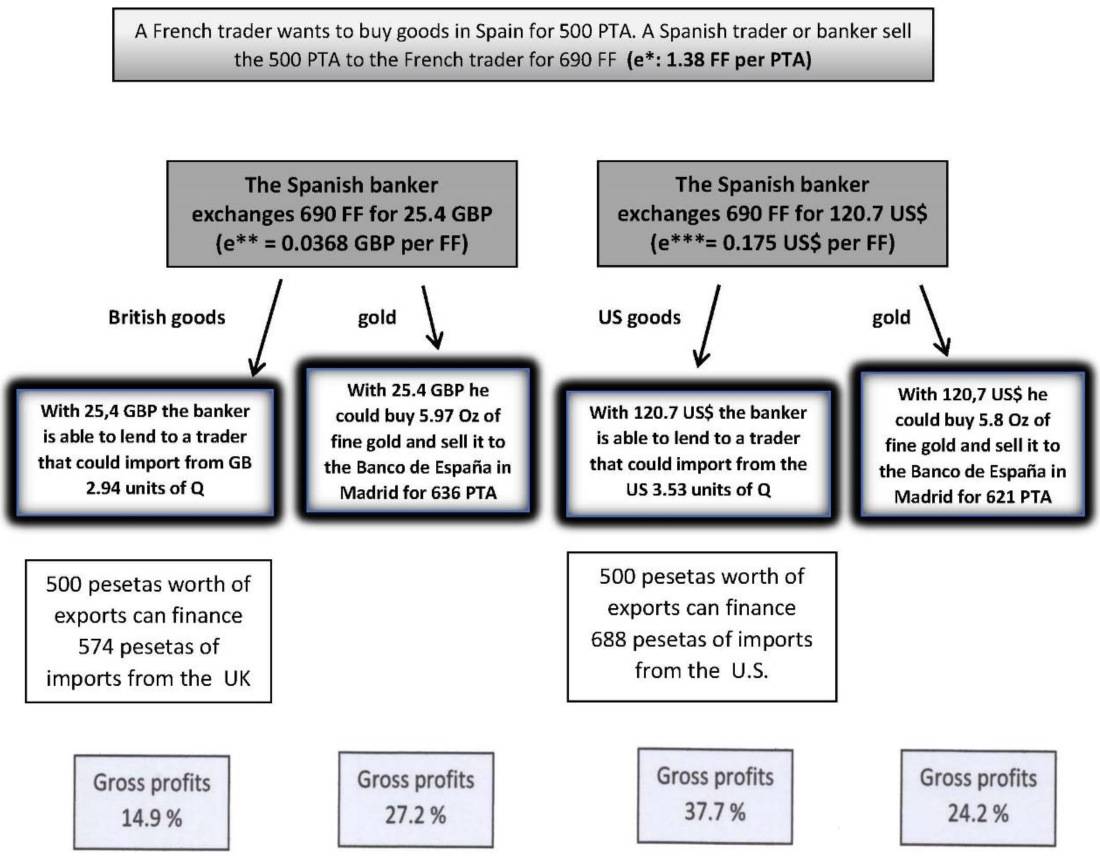
Data:

Prices (basket of goods Q)

1913 (equilibrium, PPP)	107 PTA	100 FF	3.96 GBP	19.19 US$
December, 1917	195 PTA	304 FF	8.62 GBP	34.16 US$

Exchange rates December 1917

FF per PTA	GBP per FF	US$ per FF
e* = 1.38	e**= 0.0368	e***= 0.175



Source: see text